



PONTOON GENSET

Service Manual

MKY

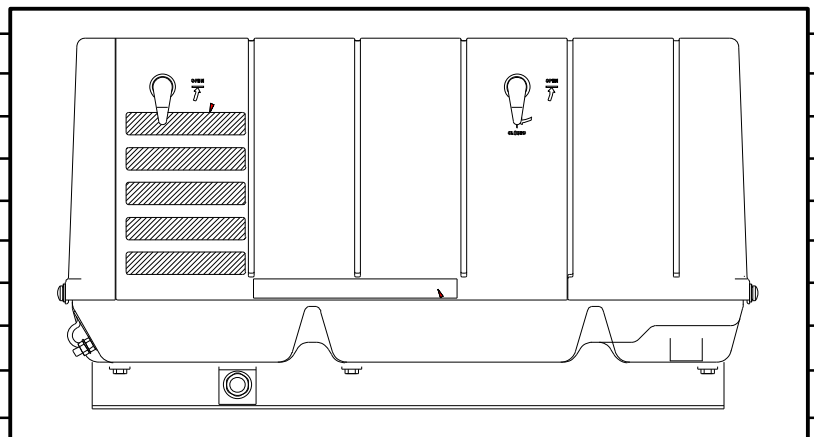


Table of Contents

SAFETY PRECAUTIONS	iii
THE HAZARDS OF CARBON MONOXIDE	v
1. INTRODUCTION	1-1
2. SPECIFICATIONS	2-1
3. DIMENSIONS AND CLEARANCES	3-1
4. TORQUE SPECIFICATIONS	4-1
5. PREPARING FOR SERVICE	5-1
Troubleshooting	5-1
Safety	5-1
Special Tools	5-2
Removing Genset	5-2
Reinstalling Genset	5-2
6. CONTROL	6-1
Controller A1	6-1
Control Component Tests	6-3
7. GENERATOR	7-1
Generator Description	7-1
Generator Service	7-3
Brushes and Slip Rings	7-6
Generator Testing	7-8
Rotor Bearing Replacement	7-10
8. PRIMARY ENGINE SYSTEMS	8-1
Introduction	8-1
Cooling System	8-1
Exhaust System	8-2
Ignition System	8-3
Crankcase Ventilation System	8-5
Governor	8-6
Fuel System	8-8
Electric Starter	8-14

9. ENGINE BLOCK ASSEMBLY	9-1
Introduction	9-1
Leak Down Test	9-2
Oil Pan	9-3
Head Cover	9-3
Rocker Arms, Push Rods and Cylinder Head	9-4
Valve System	9-5
Crankcase Cover	9-9
Governor	9-9
Camshaft, Tappet and Balancer Removal	9-10
Piston and Crankshaft	9-10
Inspection of Engine Parts	9-11
Piston and Crankshaft Installation	9-16
Bearings	9-17
Oil Seal	9-17
10. TROUBLESHOOTING	10-1
11. SERVICE CHECKLIST	11-1
WIRING DIAGRAM—60 HERTZ, 120V	A-1
ENGINE WIRING HARNESS—60 HERTZ, 120V	A-2
WIRING DIAGRAM—50 HERTZ AND 60 HERTZ, 100V	A-3
ENGINE WIRING HARNESS—50 HERTZ AND 60 HERTZ, 100V	A-4
RECONNECTION DIAGRAMS	A-5

Safety Precautions

Thoroughly read the **OPERATOR'S MANUAL** before operating the genset. Safe operation and top performance can be obtained only when equipment is operated and maintained properly.

The following symbols in this manual alert you to potential hazards to the operator, service person and equipment.

⚠ DANGER alerts you to an immediate hazard which will result in severe personal injury or death.

⚠ WARNING alerts you to a hazard or unsafe practice which can result in severe personal injury or death.

⚠ CAUTION alerts you to a hazard or unsafe practice which can result in personal injury or equipment damage.

Electricity, fuel, exhaust, moving parts and batteries present hazards which can result in severe personal injury or death.

GENERAL PRECAUTIONS

- Keep ABC fire extinguishers handy.
- Make sure all fasteners are secure and torqued properly.
- Keep the genset and its compartment clean. Excess oil and oily rags can catch fire. Dirt and gear stowed in the compartment can restrict cooling air.
- Before working on the genset, disconnect the negative (–) battery cable at the battery to prevent starting.
- Use caution when making adjustments while the genset is running—hot, moving or electrically live parts can cause severe personal injury or death.
- Used engine oil has been identified by some state and federal agencies as causing cancer or reproductive toxicity. Do not ingest, inhale, or contact used oil or its vapors.

- Benzene and lead in some gasolines have been identified by some state and federal agencies as causing cancer or reproductive toxicity. Do not ingest, inhale or contact gasoline or its vapors.
- Do not work on the genset when mentally or physically fatigued or after consuming alcohol or drugs.
- Carefully follow all applicable local, state and federal codes.

GENERATOR VOLTAGE IS DEADLY!

- Generator output connections must be made by a qualified electrician in accordance with applicable codes.
- The genset must not be connected to the public utility or any other source of electrical power. Connection could lead to electrocution of utility workers and damage to equipment. An approved switching device must be used to prevent interconnections.
- Use caution when working on live electrical equipment. Remove jewelry, make sure clothing and shoes are dry and stand on a dry wooden platform.

ENGINE EXHAUST IS DEADLY!

- Learn the symptoms of carbon monoxide poisoning in this manual and never sleep in the boat while the genset is running unless the boat is equipped with a working carbon monoxide detector.
- The exhaust system must be installed in accordance with the genset Installation Manual. Engine cooling air must not be used for heating a cabin or other compartment.
- Inspect for exhaust leaks at every startup and after every eight hours of running.
- Make sure there is ample fresh air when operating the genset in a confined area.
- See *The Hazards of Carbon Monoxide*.

FUEL IS FLAMMABLE AND EXPLOSIVE

- Do not smoke or turn electrical switches ON or OFF where fuel fumes are present or in areas sharing ventilation with fuel tanks or equipment. Keep flame, sparks, pilot lights, arc-producing equipment and all other sources of ignition well away.
- Fuel lines must be secured, free of leaks and separated or shielded from electrical wiring.

BATTERY GAS IS EXPLOSIVE

- Wear safety glasses and do not smoke while servicing batteries.

- When disconnecting or reconnecting battery cables, always disconnect the negative (–) battery cable first and reconnect it last to reduce arcing.

MOVING PARTS CAN CAUSE SEVERE PERSONAL INJURY OR DEATH

- Do not wear loose clothing or jewelry near moving parts such as PTO shafts, fans, belts and pulleys.
- Keep hands away from moving parts.
- Keep guards in place over fans, belts, pulleys, etc.

The Hazards of Carbon Monoxide

Most people know not to run a car in the garage. Many people know about the threat of carbon monoxide poisoning in the house. But few people are aware that this invisible killer is even more dangerous aboard a boat.

Engine-driven generators can produce harmful levels of carbon monoxide that can injure or kill you. The nature of boating is such that you can be harmed by this poisonous gas despite good generator set maintenance and proper ventilation.

WHAT IS CARBON MONOXIDE POISONING?

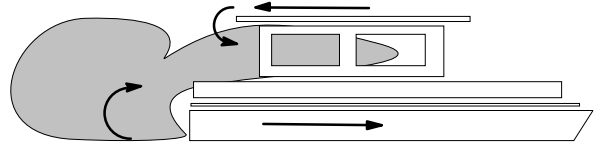
Carbon Monoxide (CO) is an odorless and colorless gas. You cannot see it or smell it. Red blood cells, however, have a greater affinity for CO than for Oxygen. Therefore, exposure even to low levels of CO for a prolonged period can lead to asphyxiation (lack of oxygen) resulting in death. Mild effects of CO poisoning include eye irritation, dizziness, headaches, fatigue and the inability to think clearly. More extreme symptoms include vomiting, seizures and collapse.

WHAT ARE THE SPECIAL RISKS OF CO ON PONTOON BOATS?

Depending on air temperature and wind, CO can accumulate between the pontoons, under an overhanging deck or rear swimming platform and in and around the boat. A swimmer can be exposed to lethal levels of CO when the genset is running. Passengers on deck and in the living quarters can also be exposed, especially when the boat is docked, beached or tied to a neighboring boat.

The risk of exposure to CO can be multiplied greatly by the "station wagon" effect, obstructions that block exhaust dissipation, and infiltration from neighboring boats. To protect against all three situations, Onan recommends that reliable CO detectors be installed on your boat.

- **The Station Wagon Effect** – A boat pushes aside the air through which it is moving, causing a zone of low pressure in the back of the boat and cabins into which exhaust gases can be drawn (see figure). A breeze across an anchored boat can have the same effect. Opening doors and windows so that air can flow through the boat can reduce the effect.



- **Obstructions** – Anchoring near a large object such as a boat house or sea wall or in a confined space such as a canyon can cause exhaust gases to accumulate in and around the boat despite good generator set maintenance and proper ventilation. Don't run the generator set when anchored in such places.
- **Exhaust from Neighboring Boats** – When boats are anchored in close quarters exhaust from neighboring boats can accumulate in and around yours.

ONLY YOU CAN PROTECT YOURSELF FROM CO POISONING!

- Watch constantly for swimmers when the generator set is running.
- Make sure exhaust cannot get under the deck, between pontoons or enter the living quarters through a window, vent or door.
- Make sure all CO detectors are working.
- Pay attention to the signs of CO poisoning.
- Check the exhaust system for corrosion, obstruction and leaks each time you start the generator set and every eight hours if you run it continuously.

BUY NOW

**Then Instant Download
the Complete Manual
Thank you very much!**